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Changes in the Qualifications Of Medical School Applicants, 1981 to 1985

Cynthia G. Tudor, Ph.D., and Robert L. Beran, Ph.D.

Abstract—The decline in the number of medical school applicants has prompted concerns among medical educators regarding the effects of this decrease on the qualifications of the applicant pool. Changes in the qualifications of medical school applicants were analyzed in terms of age, sex, and ethnicity or racial group using two measures of quality: Medical College Admission Test (MCAT) scores and grade-point averages. The distributions of these measures for 1981 and 1985 applicants were compared. The results showed that there were significant but modest gains over the years in the percentage of men and women applicants who scored from 10 to 15 on the MCAT biology, chemistry, physics, and science problems subtests. There were also significant percentage gains for applicants in all age categories, except applicants over age 32, and for all ethnic or racial groups except blacks. The authors conclude that a variety of sociodemographic, educational, and selection factors may account for these changes.

From 1981 to 1985, the number of U.S. citizens applying to medical schools dropped from 33,978 to 30,259, a decline of 12.3 percent. During this same period, the number of 18- to 24-year-olds in the U.S. population—the age group that has customarily been a major source of applicants to medical school—dropped by only 5.9 percent (1). The decreasing number of applicants, accompanied by a fairly stable first-year class size, has affected the applicant-to-acceptance ratio. This ratio declined from about 2:1 in 1981 to 1:1.9 in 1985, and the drop has prompted concerns among medical educators regarding the qualifications of the applicant pool. Are applicants who were not previously competitive now being considered for acceptance to medical school? The authors' purpose in the study reported here was to compare changes in the qualifications of medical school applicants from 1981 to 1985 by the applicants' age, sex, and ethnic or racial group.

Dr. Tudor is director for student studies, Section for Student and Educational Programs, and Dr. Beran is assistant vice president for student and educational programs, Association of American Medical Colleges, Washington, D.C.

Method

The qualifications of medical school applicants in 1981 and in 1985 were analyzed using two measures of quality: Medical College Admission Test (MCAT) scores and undergraduate grade-point averages (GPAs). While MCAT scores and grade-point averages are only two of the possible indicators of the qualifications of an applicant, these measures were chosen for analysis because they are quantifiable

and widely available. In addition, these two indices are widely used and considered to be highly important by medical school admissions personnel. These data were obtained from the Student and Applicant Information Management System maintained by the Association of American Medical Colleges. This system contains background and academic information on each individual who applies to a U.S. medical school accredited by the Liaison Committee on Medical Education.

The distributions of MCAT scores and grade-point averages were compared for the 1981 and 1985 applicant pools. Scores for each of the six MCAT subtests were grouped into three categories: 1–6 (lowest), 7–9 (middle), and 10–15 (highest). The highest range of scores includes MCAT scores that are one or more standard deviations above the mean. Grade-point averages were categorized in the following manner: 0.01–2.50, 2.51–3.00, 3.01–3.50, and 3.51–4.00.

A *z*-test was used to determine whether the difference between two proportions was significant (2). For example, this test can determine whether the proportion of applicants scoring from 10 to 15 on an MCAT test in 1985 differed significantly from the proportion scoring in that category on the same test in 1981. In addition, the *z*-tests were used to determine the significance of the difference between the proportion of applicants in different population groups (for example, men and women, members of ethnic or racial groups) scoring in the same category in the same year. A *z*-value equal to or greater than 1.96 was chosen to establish statistically significant differences.

In these analyses, age was categorized as 23 years or less, 24 to 27 years, 28 to 31 years, and 32 to 50 years. Only one person in the sample was over 50 years of age. Ethnicity and racial categories were based on self-identification. They were whites; blacks, minority groups (other than blacks) underrepresented in medical school (mainland Puerto Rican, Mexican American-Chicano, and Native American); and minority groups not underrepresented in medical schools (predominantly Asian-Americans or Pacific Islanders but also Commonwealth Puerto Ricans and other Hispanics). Only U.S. citizens were included in the analysis. The final sample consisted of 33,978 applicants in 1981 and 30,259 applicants in 1985; however, the sample sizes for individual analyses varied slightly because of missing data.

Initial Analysis

In an initial analysis of the data, the present authors in 1986 examined changes in the distribution of MCAT scores and grade-point averages (3). The results of that analysis indicated that the proportion of applicants scoring above 10 on the MCAT biology, chemistry, physics, and science problems subtests increased between 1981 and 1985. The slight increase in the proportion of applicants with scores in the high end of the distribution (scores of 10 to 15) in 1985 was accompanied by a slight decrease in the proportion of applicants with scores in the low end of the distribution (scores of 1 to 6).

There were only slight changes between 1981 and 1985 in the distribution of scores on the quantitative skills and reading skills subtests. The proportion of applicants who had science GPAs (that is, in biology, chemistry, physics, and mathematics) and overall GPAs above 3.50 declined from about 34 percent in 1981 to 31 percent in 1985. These declines may be due to decreases in the level of grade inflation observed on many campuses (4).

In summary, these initial findings sup-

port the contention that the qualifications of the national applicant pool, as based on MCAT scores, did not diminish between 1981 and 1985 but instead improved slightly. The GPAs showed a slight decline, but the decrease may have been due to less grade inflation.

Results

The analyses reported below examined changes in the qualifications of the applicants by age, sex, and ethnic or racial group.

AGE

The percentage of the applicants who had scores of 10 to 15 on the MCAT biology, chemistry, physics, and science problems subtests was significantly higher across all age categories in 1985 than in 1981 (Table 1). Except on the biology subtest, where all age groups made large gains of 8 to 10 percentage points, the older applicants (age 28 and older) in general achieved smaller gains in percentage points in 1985 than the younger applicants (age 27 or less) on the subtests. Small percentage increases in the higher range of reading skills scores were made by all age groups except applicants aged 28 to 31 years, and there were small percentage declines (2.2–3.4) in the higher range of the quantitative skills scores between 1981 and 1985 for older applicants (those 24 and over).

TABLE 1

Percentages of U.S. Medical School Applicants, by Age, Who Received Scores in Each of Three Ranges on the Six Subtests of the Medical College Admission Test, 1981 and 1985*

Subtests and Ranges	23 years or less		24 to 27 years		28 to 31 years		32 to 50 years	
	1981	1985	1981	1985	1981	1985	1981	1985
Biology								
1–6	16.0	11.7	18.0	11.9	20.0	14.3	26.7	18.2
7–9	40.8	36.6	41.8	37.9	43.4	39.3	39.3	39.6
10–15	43.1	51.6	40.2	50.2	36.6	46.3	33.9	42.2
Chemistry								
1–6	16.2	16.4	23.0	21.0	29.1	26.0	38.0	30.6
7–9	41.3	38.6	45.1	43.2	43.1	42.6	37.7	42.7
10–15	42.6	45.1	31.8	35.8	27.7	31.3	24.2	26.6
Physics								
1–6	17.9	14.8	24.9	19.7	29.4	25.2	34.2	28.7
7–9	40.0	37.1	44.0	43.0	42.3	43.1	38.9	42.5
10–15	42.1	48.0	31.1	37.3	28.3	31.7	26.9	28.8
Science Problems								
1–6	17.5	15.1	22.8	18.3	26.9	22.5	34.4	27.4
7–9	42.3	39.9	45.3	44.5	44.8	45.0	39.2	45.0
10–15	40.3	45.1	31.9	37.2	28.3	32.5	26.4	27.6
Reading Skills								
1–6	17.8	15.9	18.6	18.6	18.5	18.7	23.6	19.5
7–9	50.9	49.9	50.4	50.0	46.6	46.8	45.2	46.5
10–15	31.3	34.2	30.9	31.4	34.8	34.5	31.3	34.1
Quantitative Skills								
1–6	21.9	20.4	27.1	26.5	29.7	30.4	35.4	32.3
7–9	43.4	44.4	44.6	46.0	42.0	44.7	38.5	43.7
10–15	34.7	35.3	28.3	27.5	28.3	24.9	26.1	23.9

* Sample sizes: 1981 applicants = 18,679, ages 23 years or less; 10,153, ages 24 to 27 years; 3,612, ages 28 to 31 years; 1,529, ages 32 to 50 years; 1985 applicants = 16,336, ages 23 years or less; 8,602, ages 24 to 27 years; 3,355, ages 28 to 31 years; and 1,962, ages 32 to 50 years. Percentages may not add to 100 due to rounding.

Consistent with the trends found in the national applicant pool (3), small declines in the percentages of applicants with science GPAs greater than 3.00 were observed for all age categories except applicants over 31 years of age. Declines in overall GPA were observed for only two age categories (applicants less than 28 years of age), as shown in Table 2.

SEX

The analysis of changes in MCAT scores by sex showed that a significantly greater proportion of both men and women scored between 10 to 15 on the MCAT biology, chemistry, physics, and science problems subtests in 1985 than in 1981 (Table 3). While the men and women achieved approximately equal gains in the physics and science problems subtests, the men had greater gains than women on the biology and chemistry subtests between 1981 and 1985.

Although no changes were evident in the distribution of scores on the reading skills and quantitative skills subtests from 1981 to 1985, the results of analysis by sex showed that a significantly higher proportion of the men scored from 10 to 15 on the reading skills subtest in 1985 than in 1981, while the proportion of women scoring in this range declined slightly.

The percentages of men and women who had GPAs higher than 3.50 declined significantly between 1981 and 1985 (Table 4). This finding was similar to the pattern of changes for the national applicant pool (3). These declines for women were greater than for men.

ETHNIC OR RACIAL GROUPS

The percentage of all four ethnic or racial groups that scored from 10 to 15 on the MCAT biology, chemistry, physics, and science problems subtests increased between 1981 and 1985 (Table 5). Significant percentage increases in biology subtest scores were made by all the groups. Increases in physics, chemistry, and science problems subtest scores were significant for all groups except blacks. For example, the percentage of blacks scoring from 10 to 15 on the science problems subtest increased by .7 of a percentage

TABLE 2

Percentages of U.S. Medical School Applicants, by Age, Who Had Undergraduate Science and Overall Grade-Point Averages (GPA) in Each of Four Ranges, 1981 and 1985*

Types of GPAs and Ranges	23 years or less		24 to 27 years		28 to 31 years		32 to 50 years	
	1981	1985	1981	1985	1981	1985	1981	1985
Science†								
0.01–2.50	5.3	5.6	11.0	11.9	15.8	15.5	22.5	16.4
2.51–3.00	14.9	16.6	24.7	26.4	26.1	26.8	28.4	27.0
3.01–3.50	37.2	38.5	41.4	40.8	35.8	36.1	29.7	36.2
3.51–4.00	42.6	39.3	22.9	20.8	22.3	21.6	19.4	20.4
Overall‡								
0.01–2.50	2.1	2.0	5.8	5.8	10.0	8.8	17.6	11.1
2.51–3.00	10.4	11.2	20.7	21.7	28.2	25.7	34.6	30.4
3.01–3.50	39.7	41.3	48.4	48.8	42.2	44.3	34.3	40.5
3.51–4.00	47.6	45.4	25.0	23.7	19.5	21.2	13.6	18.0

* Percentages may not add to 100 due to rounding.

† Sample sizes: 1981 applicants = 17,523, ages 23 years or less; 9,381, ages 24 to 27 years; 3,300, ages 28 to 31 years; and 1,352, ages 32 to 50 years; 1985 applicants = 15,151, ages 23 years or less; 7,797, ages 24 to 27 years; 2,998, ages 28 to 31 years; and 1,726, ages 32 to 50 years.

‡ Sample sizes: 1981 applicants = 17,525, ages 23 years or less; 9,387, ages 24 to 27 years; 3,305, ages 28 to 31 years; and 1,352, ages 32 to 50 years; 1985 applicants = 15,154, ages 23 years or less; 7,804, ages 24 to 27 years; 3,003, ages 28 to 31 years; and 1,726, ages 32 to 50 years.

TABLE 3

Percentages of Men and Women U.S. Medical School Applicants Who Received Scores in Each of Three Ranges on the Six Subtests of the Medical College Admission Test, 1981 and 1985*

Subtests and Ranges	Men		Women	
	1981	1985	1981	1985
Biology				
1–6	15.2	10.3	22.6	16.5
7–9	40.7	35.7	42.6	40.9
10–15	44.1	54.0	34.8	42.7
Chemistry				
1–6	17.5	16.1	27.2	26.4
7–9	41.1	38.6	45.3	44.1
10–15	41.3	45.2	27.5	29.5
Physics				
1–6	16.6	13.3	33.4	27.5
7–9	39.9	36.9	44.8	45.1
10–15	43.5	49.8	21.8	27.4
Science Problems				
1–6	16.8	13.7	29.5	24.8
7–9	42.4	40.4	45.2	45.1
10–15	40.8	45.9	25.3	30.0
Reading Skills				
1–6	18.7	16.9	17.8	17.7
7–9	51.6	50.5	46.6	47.2
10–15	29.7	32.5	35.5	35.1
Quantitative Skills				
1–6	21.4	19.5	32.5	32.3
7–9	42.9	44.5	44.4	45.3
10–15	35.7	36.0	23.1	22.3

* Sample sizes: 1981 applicants = 23,218 men and 10,740 women; 1985 applicants = 19,635 men and 10,624 women. Percentages may not add to 100 due to rounding.

point from 1981 to 1985. The increases for whites, other underrepresented minorities, and other minorities were about 5 percentage points, 6 percentage points, and 9 percentage points, respectively.

Changes in the percentage of applicants scoring from 7 to 9 on the biology, chemistry, physics, and science problems subtests varied across the four groups. While there was a decrease in the percentage of whites and other minority applicants who scored from 7 to 9 on these four subtests, there was an increase in the percentage of blacks who scored in this range on these subtests except the chemistry subtest. The members of the other underrepresented minority groups scored higher on some subtests and lower on others.

Significant increases in the percentages in the upper range (10 to 15) of reading skills scores between 1981 and 1985 were limited to whites and to members of other minorities; only the other minorities also showed significant increases in this range on the quantitative skills subtest.

The percentage of other underrepresented minority applicants who achieved total and science grade-point averages above 3.50 increased slightly from 1981 to 1985 (Table 6). All other ethnic or racial groups experienced slight declines in the percentage who had GPAs higher

TABLE 4

Percentages of Men and Women U.S. Medical School Applicants Who Had Undergraduate Science and Overall Grade-Point Averages (GPA) in Each of Four Ranges, 1981 and 1985*

Types of GPAs and Ranges	Men		Women	
	1981	1985	1981	1985
Science†				
0.01–2.50	8.8	8.6	8.9	10.2
2.51–3.00	19.9	21.4	18.7	20.6
3.01–3.50	38.0	38.5	38.0	39.1
3.51–4.00	33.2	31.5	34.5	30.0
Overall‡				
0.01–2.50	5.0	4.5	3.9	4.3
2.51–3.00	17.1	17.6	14.9	15.8
3.01–3.50	42.6	43.6	41.9	44.0
3.51–4.00	35.2	34.4	39.3	36.0

* Percentages may not add to 100 due to rounding.

† Sample sizes: 1981 applicants = 21,608 men and 9,932 women; 1985 applicants = 17,949 men and 9,726 women.

‡ Sample sizes: 1981 applicants = 21,616 men and 9,937 women; 1985 applicants = 17,957 men and 9,733 women.

than 3.50, and whites were the only group to show a significant decline.

Summary

The data reported here indicate that, while the number of applicants to medical school declined between 1981 and 1985, the qualifications of the 1985 applicants did not decrease from 1981 but instead improved slightly. The analyses of the total applicant pool (3) and the applicant pool stratified by age, sex, and ethnic or racial group provide support for this conclusion. There were significant but modest gains in the percentages of men and women who scored from 10 to 15 on the MCAT biology, chemistry, physics, and science problems subtests. There were also significant gains on these subtests for the age categories except applicants over age 32 and for the ethnic or racial groups except blacks.

Similar to the findings from the analysis of the total applicant pool (3), there were few significant changes by age, sex, or ethnic or racial groups in the percentage of applicants scoring in the 10 to 15 range on the quantitative skills and reading skills subtests. Significant declines in grade-point averages were the most evident for whites and were more substantial for women than for men.

Discussion

Recently, the decrease in the number of applicants to medical school has been cause for considerable discussion and concern among medical educators. Fundamental to their concern is the perception that the decrease in available applicants has been accompanied by a change in the qualifications of the applicant group. Specifically, with fewer applicants from which to choose, schools could be in the position of considering individuals with qualifications that may not have been competitive previously.

The results of the present study support previous findings that suggested that for

TABLE 5

Percentages of U.S. Medical School Applicants, by Ethnic or Racial Group, Who Received Scores in Each of Three Ranges on the Six Subtests of the Medical College Admission Test, 1981 and 1985*

Subtests and Ranges	Whites		Blacks		Other Underrepresented Minorities		Other Minorities	
	1981	1985	1981	1985	1981	1985	1981	1985
Biology								
1–6	12.9	8.2	60.4	50.2	37.7	27.9	26.5	17.9
7–9	42.2	37.4	32.1	39.2	42.0	44.1	39.1	36.0
10–15	44.9	54.4	7.5	10.6	20.3	28.0	34.4	46.2
Chemistry								
1–6	16.1	14.8	63.9	66.8	43.6	41.4	26.0	22.1
7–9	43.8	42.4	30.3	27.3	42.1	39.8	38.4	35.2
10–15	40.1	42.8	5.8	5.9	14.3	18.8	35.6	42.7
Physics								
1–6	16.8	13.0	72.0	65.9	46.7	40.7	29.4	23.0
7–9	43.4	41.3	23.2	29.0	39.3	42.6	35.7	34.1
10–15	39.9	45.7	4.9	5.0	14.1	16.6	34.9	42.9
Science Problems								
1–6	15.6	12.5	69.4	64.8	45.3	39.3	29.3	21.9
7–9	45.2	43.9	26.2	30.1	43.0	42.8	36.7	35.6
10–15	39.2	43.7	4.4	5.1	11.7	17.9	34.0	42.5
Reading Skills								
1–6	12.6	11.1	62.4	58.7	43.4	38.6	38.8	33.0
7–9	52.2	51.1	32.8	36.4	43.8	47.3	42.6	44.1
10–15	35.3	37.8	4.7	4.9	12.8	14.1	18.6	22.9
Quantitative Skills								
1–6	18.6	17.3	78.4	78.4	55.3	52.6	40.3	33.8
7–9	46.1	47.8	18.5	19.0	35.2	36.3	37.2	40.5
10–15	35.3	34.9	3.1	2.6	9.5	11.0	22.5	25.7

* The four ethnic or racial groups were: whites; blacks; members of underrepresented minorities other than blacks (mainland Puerto Ricans, Mexican-Americans, and Native Americans); and members of other minorities, that is, other than blacks and the underrepresented minorities (for example, Asian-Americans and Pacific Islanders, Commonwealth Puerto Ricans, and other Hispanics). Sample sizes: 1981 applicants = 28,376 whites, 2,189 blacks, 838 other underrepresented minorities, and 2,323 other minorities; 1985 applicants = 24,261 whites, 1,967 blacks, 842 other underrepresented minorities and 3,057 other minorities. Percentages may not add to 100 due to rounding.

the period 1981 to 1985 there was little decline in the qualifications of applicants (3). Since the qualifications of the 1985 national applicant group cannot necessarily be considered to predict the qualifications of future groups of applicants, a continual decrease in the number of applicants could affect the qualifications of applicants in subsequent years. However, there is little reason to suggest that a decreasing number of applicants, per se, is a precursor of declining qualifications.

These analyses do not address the effect of the decline in the number of applicants on the qualifications of applicant groups to specific schools. In particular, the investigators did not consider any effects of the declining pool on the ability of institutions, especially state-supported schools, to fill their classes primarily with in-state residents.

The results of the analysis of changes by age suggest that the younger students (age 27 years or less), who comprise the

TABLE 6

Percentages of U.S. Medical School Applicants, by Ethnic or Racial Group, Who Had Undergraduate Science and Overall Grade-Point Averages (GPA) in Each of Four Ranges, 1981 and 1985*

Types of GPAs and Ranges	Whites		Blacks		Other Underrepresented Minorities		Other Minorities	
	1981	1985	1981	1985	1981	1985	1981	1985
Science†								
0.01–2.50	5.3	5.2	49.1	49.3	27.9	23.8	10.2	10.5
2.51–3.00	18.4	19.9	29.0	29.5	29.4	30.6	21.8	23.3
3.01–3.50	39.9	41.1	15.9	16.1	29.4	31.5	37.6	37.1
3.51–4.00	36.4	33.8	6.0	5.1	13.2	14.1	30.4	29.1
Overall‡								
0.01–2.50	2.4	2.0	32.6	30.9	14.1	11.3	5.2	4.2
2.51–3.00	14.1	14.3	38.4	38.9	35.1	35.6	19.0	18.9
3.01–3.50	44.0	45.6	22.7	23.8	35.4	36.5	42.3	43.8
3.51–4.00	39.5	38.2	6.4	6.3	15.6	16.7	33.6	33.1

* The four ethnic or racial groups were: whites; blacks; members of underrepresented minorities other than blacks (mainland Puerto Ricans, Mexican-Americans, and Native Americans); and members of other minorities, that is, other than blacks and the underrepresented minorities (for example, Asian-Americans and Pacific Islanders, Commonwealth Puerto Ricans, and other Hispanics). The percentages may not add to 100 due to rounding.

† Sample sizes: 1981 applicants = 26,832 whites, 1,900 blacks, 708 other underrepresented minorities, and 1,892 other minorities; 1985 applicants = 22,471 whites, 1,874 blacks, 660 other underrepresented minorities, and 2,544 other minorities.

‡ Sample sizes: 1981 applicants = 26,843 whites, 1,900 blacks, 708 other underrepresented minorities, and 1,894 other minorities; 1985 applicants = 22,482 whites, 1,876 blacks, 660 other underrepresented minorities, and 2,545 other minorities.

majority of applicants, improved their qualifications from 1981 to 1985. While the MCAT and GPA gains of the older students were not as dramatic as those of younger students, these older students also showed increasing qualifications. The authors believe that this may be due to the increased number of postbaccalaureate programs that have emerged in recent years to provide concentrated study in subjects helpful to the medical school applicant.

The percentage of women who achieved MCAT scores in the high ranges (10 to 15) increased in 1985. While the percentage of women scoring in this range did not exceed the percentage of men scoring in the same categories, the percentages of women scoring from 10 to 15 increased.

In a 1985 study, Shea and Fullilove (5) concluded that the MCAT scores of blacks improved by a greater amount than did the scores of whites between 1977 and 1983. Their study examined score changes and categorized the distribution of accepted applicants by MCAT scores of 1 to 4, 5 to 7, and 8 and above. The results of the present analysis indicate that the percentage of black applicants who scored from 10 to 15 on the chemistry, physics, and science problems subtests did not increase between 1981 and 1985.

One explanation for the apparent difference in the findings of these two studies concerns the variation in the method of categorizing MCAT scores. The middle range of MCAT scores (scores of 7 to 9) used in the present analysis overlaps the upper range of scores (scores of 8 and over) used by Shea and Fullilove (5).

While there was not a significant increase in 1985 in the percentage of blacks who scored from 10 to 15, there was a significant increase in the percentage of black applicants who scored from 7 to 9. Thus, the improvement in MCAT scores for black applicants noted by Shea and Fullilove appears to occur chiefly at the score levels of 8 and 9.

Several other factors should be considered when attempting to interpret the lack of significant increases in the percentage of black applicants scoring in the 10 to 15 range. The first factor is that the MCAT scores of black applicants may be affected by the lower ratio of male-to-female applicants in the black applicant pool. As a group, women do not perform as well as men on the MCAT biology, chemistry, physics, and science problems subtests, and blacks are the only applicant group that has more female than male applicants. Second, there was no consistent increase in the percentage of black applicants who had physical science or humanities as their undergraduate major. MCAT examinees majoring in these areas generally perform better on these four MCAT subtests (6, 7) than those with other majors.

One explanation of the improvement in the qualifications of the total applicant pool might be that an increasing number of potential applicants did not apply due to low grade-point averages and/or low MCAT scores. Thus, such a decline in potential applicants with lesser qualifications might have naturally resulted in an applicant group with higher GPAs and MCAT scores. Changes also occurred during the study period in the number of potential applicants, that is, primarily those persons who had taken the MCAT examination. The pool of MCAT examinees decreased from 48,203 in 1981 to 42,432 in 1985 (6, 7). Regardless of the decline in the number of MCAT examinees and the number of medical school applicants, results of the present analysis showed that the qualifications of the resulting applicant pool improved.

It is important to remember that the demographic and academic characteristics of medical school applicants are not necessarily similar to those of MCAT examinees, nor are they generalizable to those of college students as a whole. Thus, the qualifications of black medical school applicants are not necessarily similar to those of black examinees or black undergraduate college students. Furthermore, while there is self-selection of individuals into the MCAT examinee pool, there is also self-selection from this pool to the applicant pool. For example, a number of examinees who score in the 1–to–6 range on MCAT tests do not apply to medical school. Different decisions by various racial or ethnic groups not to become applicants may affect the qualifications of the resulting applicant pool.

An analysis of Graduate Record Examination (GRE) data lends additional information about the effects of such decisions. The GRE is a standardized examination, administered by the Educational Testing Service, that is used by many graduate programs as a prerequisite for admission to graduate school. The GRE and the MCAT produce similar types of information on test results across different examinee groups. A comparison of the data on examinees who take these examinations could show whether changes in the applicant pool of one examination were also occurring in the pool of the other. While information was not available on the distribution of GRE scores by the age and sex of the examinees, changes in GRE scoring patterns between 1981 and 1985 were examined by other investigators (8, 9) using ethnic

or racial categories and scoring ranges similar to those used in the present study. Those GRE analyses showed that there was little change in the percentage of examinees scoring in the upper range of GRE scores between 1981 and 1985 for any ethnic or racial group. While this lack of change may be due to the measurement qualities of the GRE, it may also be due to the sociodemographic and academic characteristics of individuals who elected to take this examination. Thus, changes in MCAT scoring patterns of different age and ethnic or racial groups and of men versus women may be due to changes between 1981 and 1985 in the characteristics of examinees who elected to take the test.

The explanations given here can only suggest factors that might affect differences in MCAT test scores over time. While no one factor can be considered to have caused the changes, there is enough evidence to suggest that the lack of an increase in the percentage of blacks scoring from 10 to 15 on MCAT tests may be due to a combination of sociodemographic, educational, and self-selection factors. More research is needed on the differential impact of each of these types of factors on the qualifications of medical school applicants.

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